

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 May 2008 (15.05.2008)

PCT

(10) International Publication Number
WO 2008/058271 A3

(51) International Patent Classification:
G06F 3/033 (2006.01) G06K 9/22 (2006.01)

(74) Agent: **PITT, Roger; Kirkpatrick & Lockhart Preston Gates Ellis LLP, 599 Lexington Avenue, New York, NY 10022 (US).**

(21) International Application Number:
PCT/US2007/084265

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(22) International Filing Date:
9 November 2007 (09.11.2007)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language:
English

(26) Publication Language:
English

(30) Priority Data:
60/865,053 9 November 2006 (09.11.2006) US

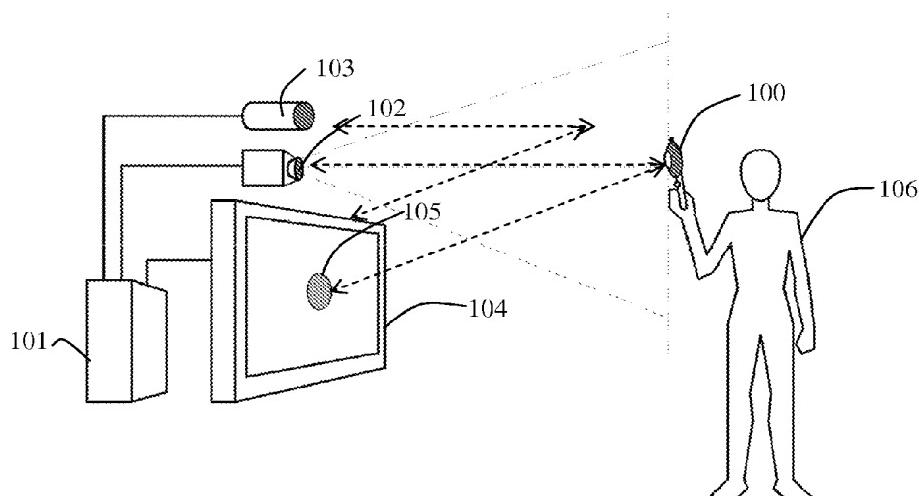
(71) Applicants (for all designated States except US): **INTELLIGENCE FRONTIER MEDIA LABORATORY LTD** [—/CN]; Unit 10-11, 8/F., Topsail Plaza, 11 On Sum Street, Shatin, Hong Kong (CN). **LEE, Sin, Woon** [US/US]; 73 08 188 Street, Flushing, NY 11366-1728 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YOUNG, Hay** [—/CN]; c/o Intelligence Frontier Media Laboratory Ltd, Unit 10-11, 8/F., Topsail Plaza, 11 On Sum Street, Shatin, Hong Kong (CN). **TANG, Alex** [—/CN]; c/o Intelligence Frontier Media Laboratory Ltd, Unit 10-11, 8/F., Topsail Plaza, 11 On Sum Street, Shatin, Hong Kong (CN).

[Continued on next page]

(54) Title: CONTROL DEVICE WITH HYBRID SENSING SYSTEM COMPRISED OF VISION-BASED PATTERN RECOGNITION AND ELECTRONIC SIGNAL TRANSMISSION



WO 2008/058271 A3

(57) Abstract: The invention provides a method and apparatus for use as a control device for controlling a computing system. The method includes a hybrid sensing system comprised of computer- vision- based pattern recognition and electronic signal transmission. The control device is embedded with a designated color light pattern and an electronic signal transmitter. The color light pattern within the field of sight of a video image capturing device is detected and identified by a computing system. Methods for configuring the color light pattern are included. The control device can be handheld or attached to a human body. The movement of the color light pattern in the 3-dimensional space will provide 3-dimensional positional information of a virtual pointer to the computing system. The activation of the electronic signal transmitter by pressing a control button on the control device will trigger input commands to the computing system.



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

14 August 2008

INTERNATIONAL SEARCH REPORT

International application No. PCT/US2007/084265

A. CLASSIFICATION OF SUBJECT MATTER**G06F 3/033(2006.01)i, G06K 9/22(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 G06F, G06K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility Models and Applications for Utility Models since 1975

Japanese Utility Models and Applications for Utility Models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS (KIPO internal) " Keyword : (image, pattern, video), (recognize, recognition, detect, capture), (position, location, place, point), (camera, ccd, camcorder), (3 dimension, three dimension), (orientation, direction, rotation) "

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
1-4,6-9,15-22 5,10-14	CA 2314548 A1 (RAYMOND R. STAAB, et al.) 02 Feb. 2001 Abstract, Claims 1-24, Figs.3-7, Page 1 Line 3-Page 4 Line 14	X A
1-4,6-9,15-22 5,10-14	JP 2006-178948 A (SONY COMPUTER ENTERTAINMENT INC.) 06 Jul. 2006 Abstract, Claims 1-7, Figs.2-5, Paragraphs <1>-<36>	X A
1-4,6-9,15-22 5,10-14	US 5297061 A (DANIEL F. DEMENTHON, et al.) 22 Mar. 1994 Abstract, Claims 1,9, Figs.1-3,9, Col.1 Line 10-Col.4 Line 42	X A
1-22	US 5534917 A (FRANCIS MACDOUGALL) 09 Jul. 1996 Abstract, Claims 1,11,20,24,28,31 Figs.6-9, Col.1 Line 9-Col.3 Line 11	A

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

18 JUNE 2008 (18.06.2008)

Date of mailing of the international search report

19 JUNE 2008 (19.06.2008)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
 Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

CHUN, Dae Sik

Telephone No. 82-42-481-5871



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2007/084265

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CA 2314548 A1	02.02.2001	EP 1074934 A2 JP 2001-075726 A US 6417836 BA	07.02.2001 23.03.2001 09.07.2002
JP 2006-178948 A	06.07.2006	EP 1176559 A2 JP 2002-140705 A2 US 6795068 BA	30.01.2002 17.05.2002 21.09.2004
US 5297061 A	22.03.1994	None	
US 5534917 A	09.07.1996	None	